

SUMMARY

A targeted AMD pathway redesign at Luton and Dunstable University Hospital significantly improved NICE-aligned two-week referral-to-first-injection performance from 41% to 76%, driven by prompter clinic assessment and more consistent injection scheduling.

Background

- Neovascular age related macular degeneration (nAMD) is a time-critical cause of irreversible central vision loss in adults over 50.
- Primary treatment is intravitreal anti-VEGF therapy.
- NICE guidance recommends first injection within 2 weeks of community referral for suspected nAMD (1,2)
- Delays result in measurable, irreversible vision loss and worsened prognosis.

Purpose

- Assess compliance with 2-week referral-to-first-injection (RTFI) standard at Luton & Dunstable University Hospital.
- Assess referral-to-first appointment (RTFA) and first-appointment-to-first-injection (FATFI) intervals to identify pathway limitations
- Assess impact of pathway interventions on RTFI compliance.
- Monitor functional and anatomical outcomes across cycles.

Methods

Cycle 1 • 81 referrals
Mar–Dec 2024

Cycle 2 • 50 referrals
May–Nov 2025

- Retrospective two-cycle quality improvement audit.
- Primary outcome: % patients meeting the 2-week RTFI target.
- Pathway components: RTFA (referral-to-first-appointment) and FATFI (first-appointment-to-first-injection) intervals.
- Secondary outcomes: ETDRS visual acuity change and OCT central macular thickness (CMT) change pre and post injection
- Statistics: Mann–Whitney U (continuous), Chi-square (proportions), $\alpha = 0.05$.

Targeted interventions after Cycle 1

① 1-week internal deadline for first clinic appointment following referral

② Increased injection clinic capacity

③ Enhanced clinician awareness of referral timelines

Results – primary outcome measure

Cycle 1 compliance

41%

33/81 met the 2-week RTFI standard

Cycle 2 compliance

76%

38/50 met the 2-week RTFI standard

Improvement

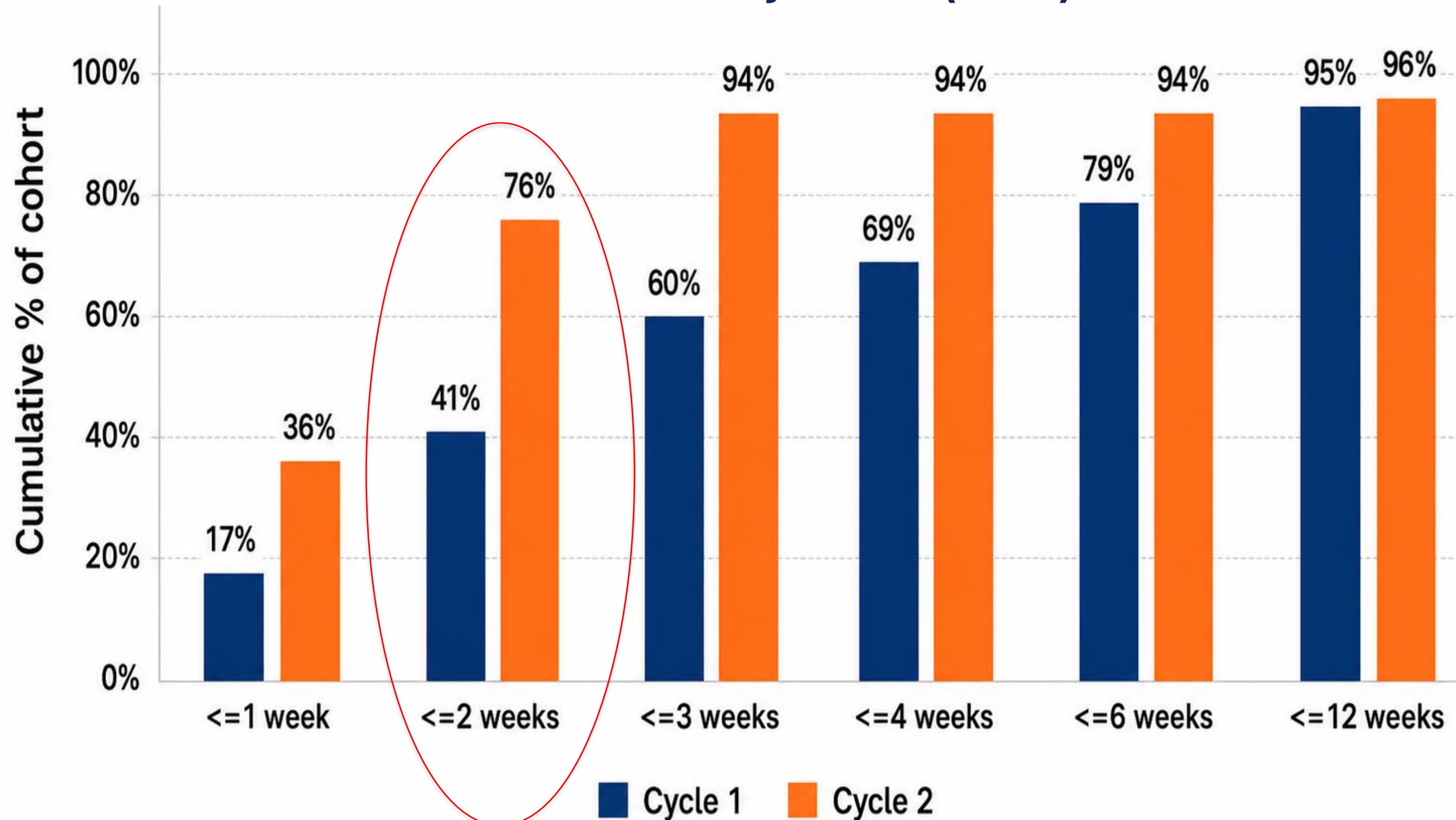
+35%

$\chi^2 = 14.10$

$p = 0.00017$

Post-hoc power 98.3%

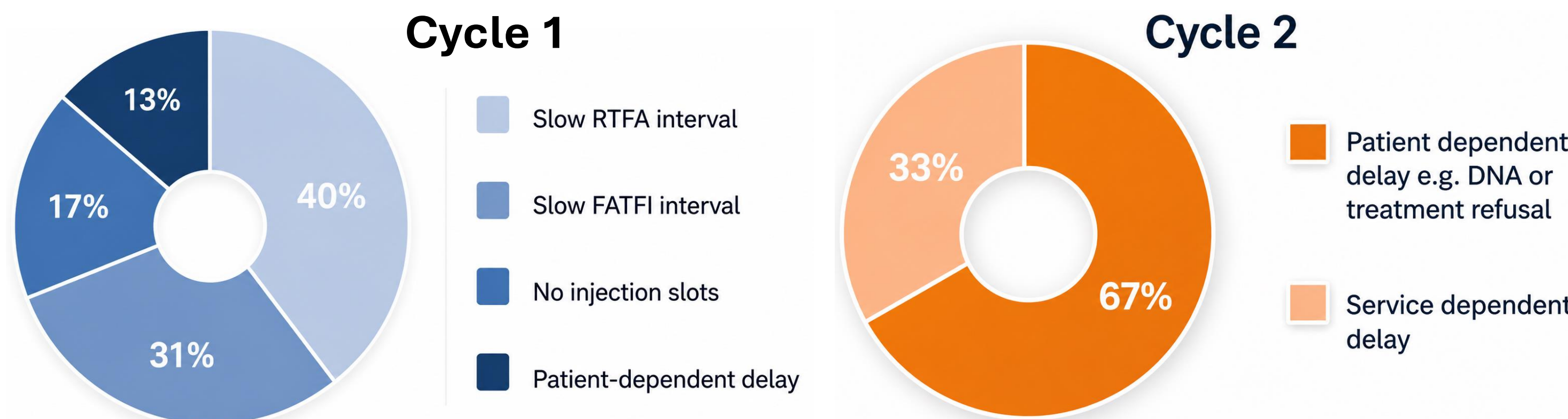
Referral to first injection (RTFI) interval



Discussion

- RTFI compliance nearly doubled (41% → 76%) after pragmatic service redesign.
- National average for 2-week RTFI compliance → 40.3% as per the National Ophthalmology Database (NOD) 2025 (3)
- Improved RTFA (2 → 1 week) was the critical lever within the nAMD pathway
- FATFI became more consistent (IQR 1 → 0), indicating reliable injection scheduling.
- Service-dependent delays fell from 87% in Cycle 1 → 33% in Cycle 2
- Visual and anatomical outcomes were preserved between cycles.

Reasons for delay



Key Message: Realistically: to inject patients within 2 weeks of referral, first clinic appointment must be within 1 week of referral

Limitations

- Single-centre retrospective design.
- Cycle 2 had a smaller cohort than Cycle 1 (n = 50 vs 81).
- Short follow-up period for secondary outcomes when compared to NOD 2025 (3)
- Incomplete follow-up data in both cycles may introduce attrition bias

Next steps

- Develop patient-facing materials to reduce patient-related delays.
- Initiate Cycle 3 to assess sustainability.
- Explore community-level interventions to improve referral quality and speed.
- Benchmark with other services and share best practice.

References



RTFA and FATFI interval analysis

RTFA interval

Cycle 1 : median 2 weeks (IQR 2)

Cycle 2 : median 1 week (IQR 1)

$p = 0.0016$

FATFI interval

Cycle 1 : median 1 week (IQR 1)

Cycle 2 : median 1 week (IQR 0)

$p = 0.007$

Analysis: Improved RTFA interval indicates faster initial assessment in clinic. FATFI interval shifted earlier with reduced variability indicating more consistent injection scheduling

Secondary outcomes – pre and post injection

ETDRS change

Cycle 1 +3 letters

Cycle 2 +8 letters

$p = 0.08$

CMT change

Cycle 1 –80 μm

Cycle 2 –82 μm

$p = 0.71$

Analysis: Visual acuity and OCT central macular thickness changes were statistically comparable between cycles, confirming pathway acceleration did not compromise early treatment efficacy.

Average follow-up interval post-injection: 17 weeks Cycle 1; 18 weeks Cycle 2